What is Claimed:

1. A safety restraint design controller for controlling the design of a safety restraint system so that a predetermined desired level of an occupant's response is produced, the controller comprising:

a database (88) for storing an occupant restraint factor response model (90), the model interrelating at least one predetermined restraint factor (88) with the occupant response (89), the restraint factors having a level that is indicative of setting values for controlling the safety restraint design;

a database engine connected to the database for determining a level for the occupant response (89) based upon the model and upon a first level of the restraint factors (88);

an optimizer connected to the database engine for determining a second level of the restraint factors (88), which produces the desired level of the occupant response based upon the desired level of the occupant response from the database engine;

whereby the safety restraints design is controlled based upon the determined second level of the restraint factors, which produces the desired level of the safety response.

2. The safety restraint design controller of claim 1 wherein the model is based upon a design of experiments involving the restraint factors and the occupant response.

3. The safety restraint design controller of claim 1 wherein the model interrelates a plurality of restraint factors (88) with a plurality of occupant responses (89).

4. The safety restraint design controller of claim 3 wherein the optimizer constrains the permissible level ranges for the restraint factors and for the occupant responses (89) in determining a second level of the occupant restraint factors.

5. The safety restraint design controller of claim 3 further including a computer-human interface (84) for constraining the permissible level ranges for the restraint factors and for the occupant responses in determining a second level of the occupant responses.

6. The safety restraint design controller of claim 3 further containing a module for determining a second level of restraint factors.

7. The safety restraint design controller of claim 3 wherein the predetermined restraint factor is determined by conducting a vehicle barrier test.

8. The safety restraint design controller of claim 1 wherein the optimizer constrains the permissible level ranges (91) for the restraint factors and for the occupant responses (92) in determining a second level of the occupant restraint factors.

9. A computer implemented method for designing a safety restraint system so that a predetermined desired level of occupant responses produced, comprising the steps of:

storing an occupant restraint factor response model (90) in a computer storage medium (84), the model interrelating at least one predetermined restraint factor (88) with the occupant response (89), the restraint factors having a level that is indicative of setting values for response output for components within the design of the restraint system;

determining a level for the occupant response (89) based upon the model and upon a first level of the restraint factors;

determining a second level of the restraint factors (88), which produces the desired level of the occupant response (89) based upon the determined level of the occupant response (89); and

modifying the restraint system based upon the determined second level of the restraint factors (88), which produces the desired level of the occupant response (82)..

10. The computer implemented method for designing a safety restraint system of claim 9 wherein the model is based on a design of

experiments involving the restraint factors (88) and the occupant response (89).

11. The computer implemented method for designing a safety restraint system of Claim 9 wherein the model includes interrelating a plurality of restraint factors (86) with a plurality of occupant responses (89).

12. The computer implemented method for designing a safety restraint system of Claim 9 further comprising the step of: constraining the permissible level of the plurality of the restraint factors (88) and for the plurality of occupant responses in determining a second level of the occupant responses (89).

13. The computer implemented method for designing a safety restraint system of Claim 9 wherein a computer-human interface (84) is used for constraining the permissible level ranges for the restraint factors and for the occupant responses in determining a second level of the occupant responses.

14. The computer implemented method for designing a safety restraint system of Claim 9 further including the step of :

determining a second level of the restraints factors.

15. A computer implemented method for controlling the design of an occupant restraint system so that a predetermined desired level of occupant response is produced, comprising the steps of:

(a) storing an occupant restraint factor - response model in a computer storage medium (84), the model interrelating at least one predetermined restraint factor (88) with the occupant response (89), the restraint factors having a level that is indicative of setting values for controlling the design of the occupant restraint system;

(b) establishing at least one constraint for the model based upon the desired level of the occupant response;

(c) determining the level of the restraint factors that produce the desired level of the restraint response based upon the model having the established constraint; and

(d) controlling the design of the occupant restraint system based upon the determination level of the restraint factors that produces the desired level of the occupant response (89).

16. The computer implemented method for controlling the design of an occupant restraint system of claim 15 wherein the model having the established constraints includes having a level of at least one restraint factor restrained.

17. The computer implemented method for controlling the design of an occupant restraint system of claim 15 wherein the model includes

interrelating a plurality of restraint factors with a plurality of occupant restraint factors (89).

18. In a safety restraint design controller for controlling the design of a safety restraint system having a graphical user interface, a method of providing and selecting from a menu on the display, the method comprising:

retrieving a set of menu entries from the menu, each menu entry representing a occupant restraint characteristic;

displaying the set of menu display options on the display;

receiving a menu entry selection signal indicative of the selection device pointing at a selected menu entry from the set menu entries; and

in response to the signal, performing a search of a database for injury data corresponding to the occupant response represented by the selected menu entry.

19. The method of providing and selecting from a menu on the display of Claim 18 further including the step of displaying the injury data.

20. The method of providing and selecting from a menu on the display of Claim 19 further comprising the steps of:

displaying a second set of menu display options on the display indicative of an occupant restraint characteristic;

receiving a second menu entry selection signal indicative of the selection device pointing at a second selected menu entry from the second set menu entries.